Statement of Work: Fermilab Air Diverter T-Block Ductwork, *May 1, 2020*

Install a HVAC duct system to provide air cooling to NuMI Horn 1 stripline, routed through the shielding penetration. All ducting to be made of 304 SS.

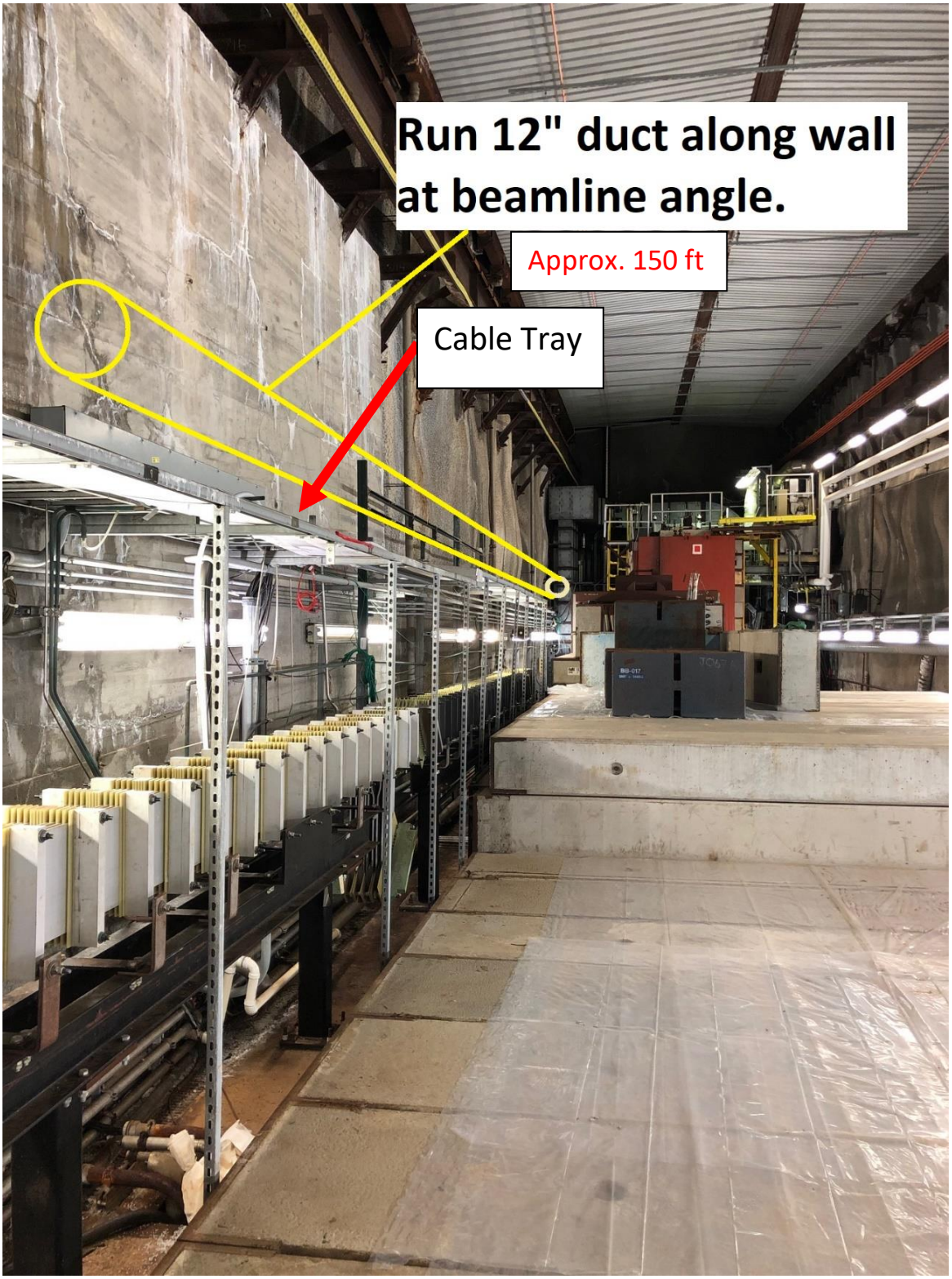
Location: NuMI Target Hall.

1. Attach the (Fermilab owned) fan to ductwork - need a stand built for it.

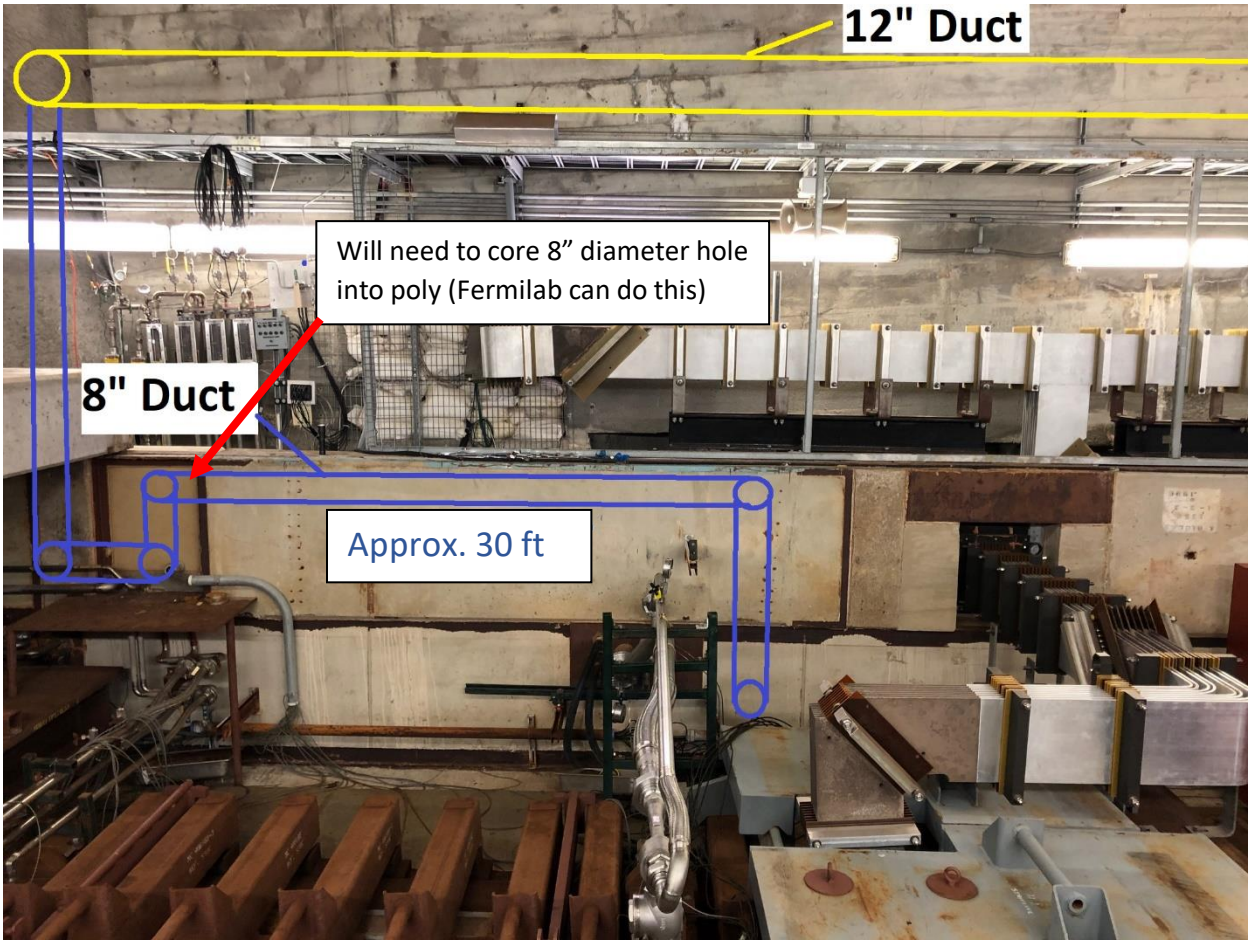
Seal ducting with Vulkem Caulk or Viton Gasket. No Buna-N or standard rubber.

Design air flow rate is 600CFM and the **fan is on hand**. It has a damper on it to meter flow & needs to be set during commissioning. After the system is hooked up, a straight section of duct will need a 3/8" port so we can get an anemometer in to verify flow. There should be 12' of straight ductwork on either side of the port.

2. 12" duct routing work to the air handling system and other side of the fan, qty. 3 – mount **approximately 150 feet** of ducting to wall, or use cable tray for support (easier).



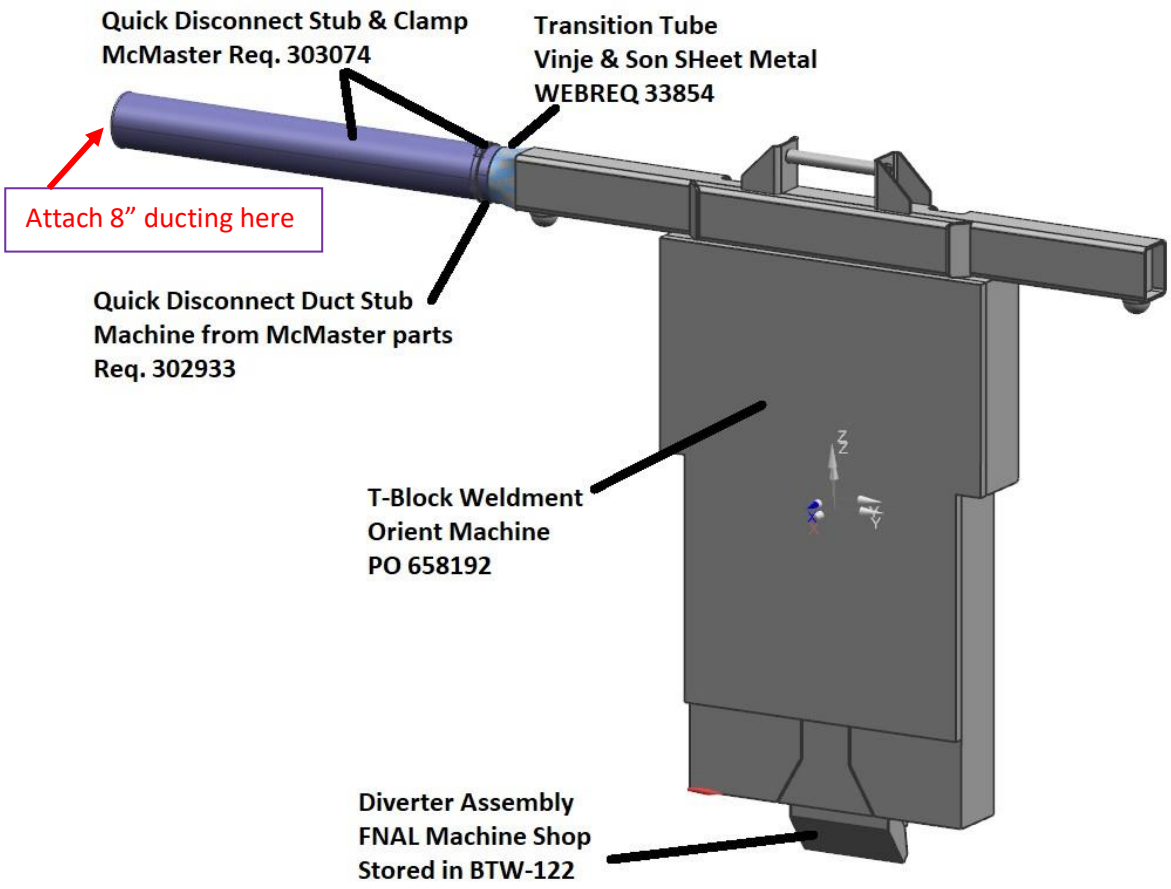
3. Approximately <u>30 feet</u> of 8" duct routing work in embattlement - need a transition 12"-to-8", embattlement coring and sealing



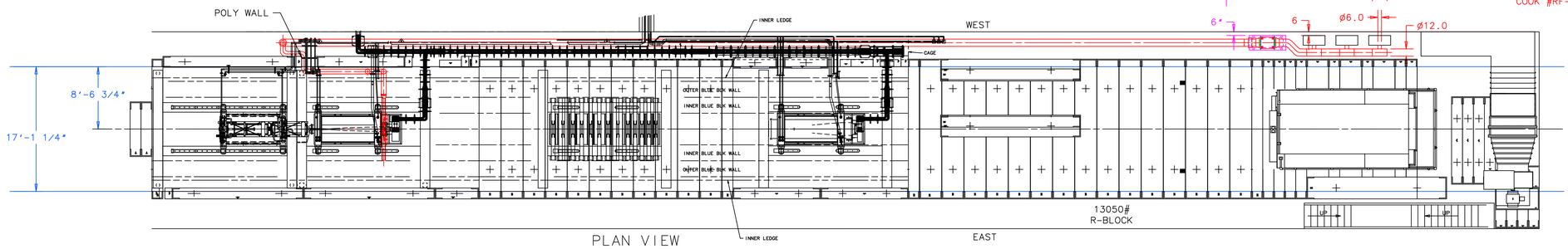
4. Make connection to T-block - need:

- Transition tube already welded on the T-block
- Size 8" quick disconnect duct stub already welded to the transition tube
- quick-disconnect ductwork + duct clamps (on hand)

Everything Shown Here is already on hand



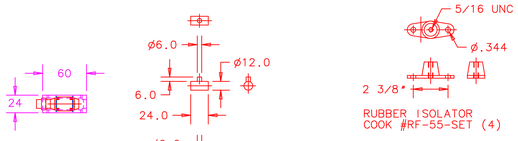
5. System commissioning - Instrumentation to ACNET: a current toroid for fan motor (Toroid provided by Fermilab)

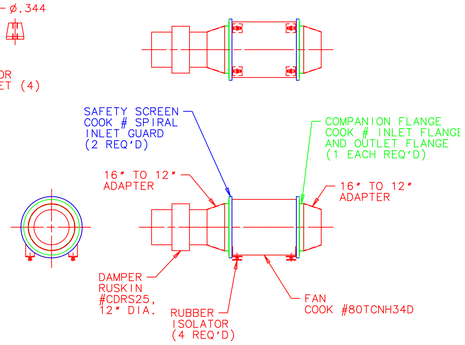


PLAN VIEW

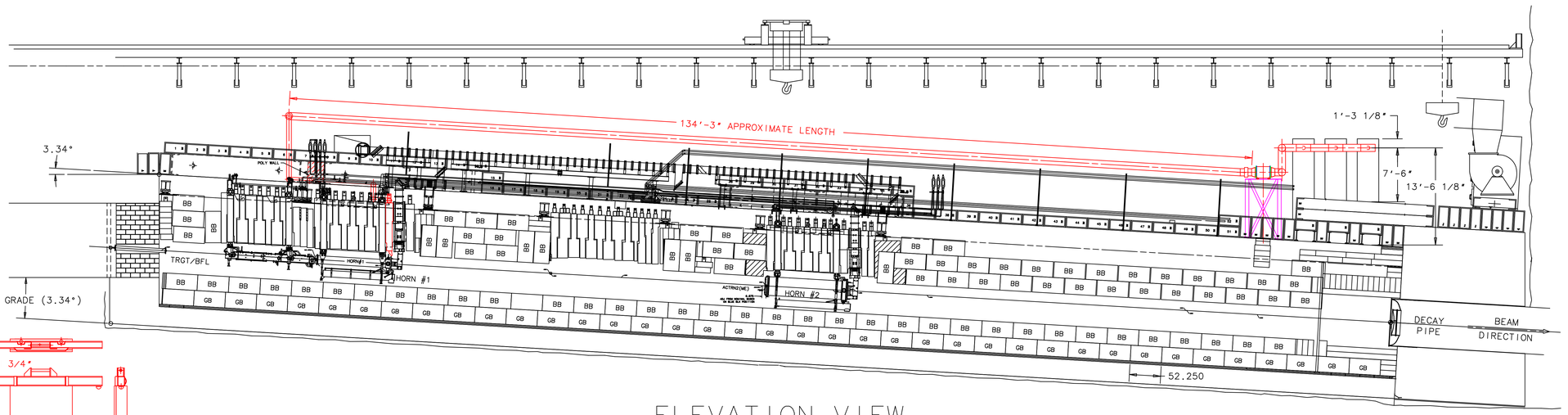
AT 3.34° NOT GRAVITY

MOST R-BLOCKS REMOVED FOR CLARITY

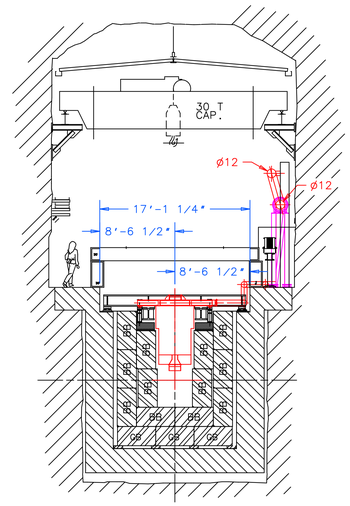


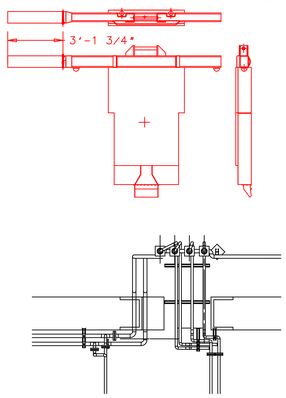


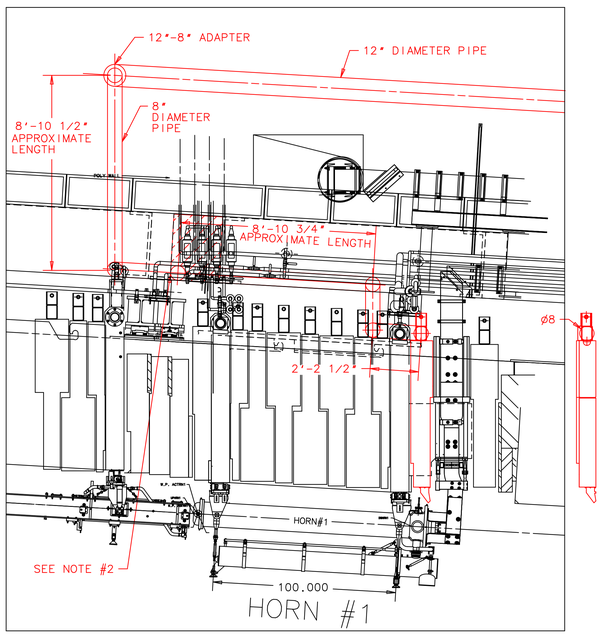
FAN DETAIL AND ASSEMBLY
(SEE NOTE #1)



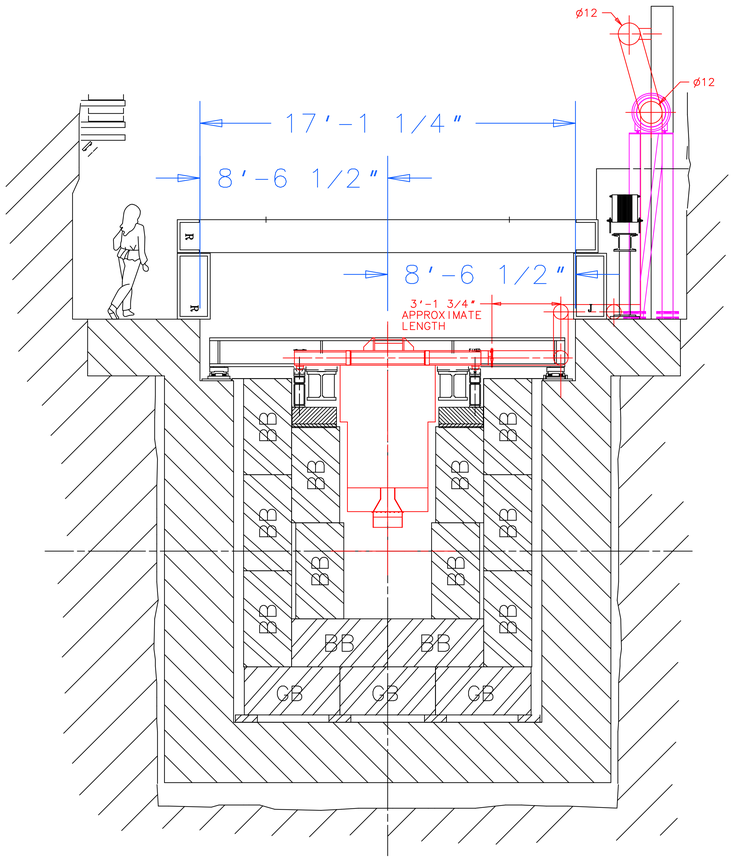
ELEVATION VIEW

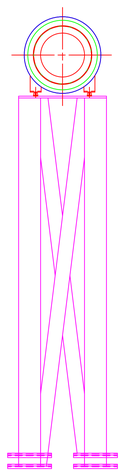


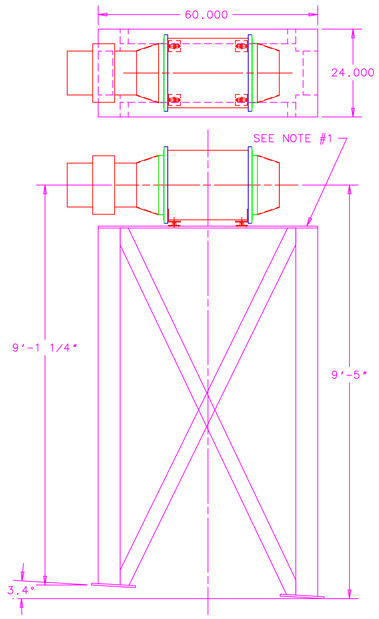


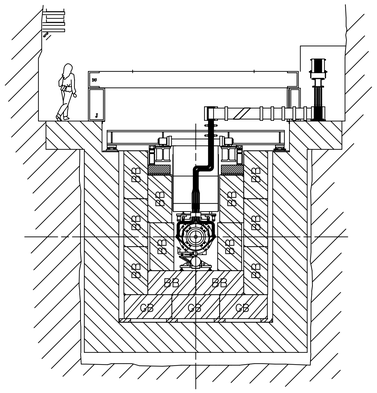


HORN #1









NOTES:

1.) FAN ASSEMBLY BASE & SUPPORT STRUCTURE TO BE FABRICATED BY DUCTING CONTRACTOR.

2.) PENETRATION TO BE CORED BY CONTRACTOR OR MODIFIED BY FERMILAB AS DIRECTED BY ESH&Q.

3.) CONTRACTOR TO SUPPLY ALL DUCTWORK & TRANSITIONS. FERMILAB TO SUPPLY DAMPER & FAN ASSEMBLY, AND QUICK DISCONNECT COUPLINGS AT T-BLOCK.

4.) FINAL AIR FLOW CALIBRATION: CONFIRM FLOW RATE IN RANGE 600-1000 CFM.

F10129759-NUMI TARGET HALL DUCT WORK LAYOUT